

RESUME

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Educational History:

California State Polytechnic University, B.S., 1972, Environmental Microbiology

Employment History:

Environmental Microbiology Consultant – July 2001 to Present.

Since July 2001, have accepted consultant assignments with special focus on groundwater issues associated with groundwater recharge, microbiological methods development and biosolids utilization and research.

County Sanitation Districts of Los Angeles County, San Jose Creek Water Quality Laboratory, Whittier, CA. - April 1971 to July 2001 (Retired).

Primary experience is in environmental research and program management, specifically in the public health aspects of water reclamation, water reuse and waste solids recycling. Thirty years experience at the Districts' in environmental microbiology. During the period from 1971 to 1980 advanced through professional positions to level of Laboratory Supervisor, with progressively increasing program management responsibilities. Duties included coordinating activities of scientific staff of nine microbiologists and technicians with engineering projects and research studies. Represented agency in regulatory and legal issues related to public health aspects of wastewater treatment, biosolids utilization and water reuse. Responsible for managing microbiology phase of research programs in public health aspects of water reclamation and reuse, with emphasis on research related to groundwater recharge for indirect potable reuse, and sludge utilization, including work in areas of indicator and pathogenic bacteriology, parasitology, mycology, virology and toxicology. Assignments included managing and coordinating microbiological portions of funded multi-agency research effort examining sludge disposal options in Southern California and managing portions of funded research examining health aspects of water reuse via groundwater recharge. Was principal investigator and project manager for USEPA funded 26-city national study of occurrence of pathogens in distributed and marketed sludge products. Was Co-PI for microbiological portions of large southwestern U.S. study on soil aquifer treatment for sustainable water reuse. Have served as a consultant, program reviewer and workshop participant for USEPA in areas of biosolids research, recreational water quality,

and development of Groundwater Rule. Presented work at 1997 EPA workshop (Cincinnati) "Analytical Methods for Monitoring Microbes in Groundwater" on development of a large volume enrichment method to detect phage in groundwater, which was later further developed as Method 1601 for GWR testing. Have served on numerous research advisory/review committees for Water Environment Research Foundation, American Water Works Research Foundation and Water Reuse Foundation sponsored projects. Member of *Standard Methods* Committee in Microbiology for 19th, 20th and 21st editions, specifically on Joint Task Groups for Quality Assurance, Pathogenic Bacteria and Bacteriophage. Served as reviewer for National Research Council 2002 report on Biosolids Applied to Land. Have been invited University guest lecturer and served as expert witness in reclaimed water groundwater recharge litigation. Retired from CSDLAC July, 2001.

Envirogenic's Company Aerojet-General Corporation, El Monte, CA. - 1969 to 1971.

Senior Technician - Worked in the membrane research department on reverse osmosis membrane development and evaluation. Duties included running and maintaining the membrane testing laboratory and associated equipment. Also included devising and designing equipment and experiments for special water projects. Routine water analyses were performed by instrumental and wet chemical methods.

Project Participation:

Pomona Virus Study: for the California State Water Resources Control Board and U.S. Environmental Protection Agency, by County Sanitation Districts of Los Angeles County.

Pathogen Survival Studies: subcontract with Regional Wastewater Solids Management Program, Los Angeles/Orange County Metropolitan Area. **P.I.**

Pathogen Inactivation During Sludge Composting: by County Sanitation Districts of Los Angeles County: U.S. Environmental Protection Agency.

Health Aspects of Groundwater Recharge with Reclaimed Water in the Montebello Forebay. County Sanitation Districts of Los Angeles County (lead agency) in cooperation with State Department of Water Resources; State Department of Health; State Water Resources Control Board; Los Angeles County Department of Health Services; Regional Water Quality Control Board; and U.S. Environmental Protection Agency.

Occurrence of Pathogens in Distribution and Marketing Municipal Sludges: U.S. Environmental Protection Agency. Project Manager and **P.I.**

Soil Aquifer Treatment for Sustainable Water Reuse: American Water Works Research Foundation. **Co-P.I.**

Development of Practical Monitoring Techniques to Identify the Presence of Pathogens in

Receiving Waters: Water Environment Research Foundation. Project Manager and **P.I.**

Study to Compare Current Fecal Bacteria Monitoring with Fecal Coliphage Monitoring on an Equivalent Volume Basis. American Water Works Research Foundation. Project Manager and **P.I.**

Papers and Publications:

Reconcentration Techniques for the Detection of Enteric Viruses from Water and Wastewater. W. A. Yanko. Southern California Chapter, American Society for Microbiology, Annual Meeting, San Diego, November 1975.

Analysis of Sludges for Indicator and Pathogenic Microorganisms. W. A. Yanko, J. S. Glass, and R. J. Van Sluis. California Water Pollution Control Association, Annual Conference, Anaheim, April 1977.

The Fate of Phenolics in Wastewater - Determination of Direct-Injection GLC and Warbug Respirometry. R. B. Baird, C. L. Kuo, J. S. Shapiro, and W. A. Yanko, 1974. *Archives of Environmental Contamination and Toxicology*, Vol. 2, No. 2.

Practical Method for Detecting Poliovirus in Anaerobic Digester Sludge. J. S. Glass, R. J. Van Sluis, and W. A. Yanko, 1978. *Applied and Environmental Microbiology*, Vol. 35, No. 5.

Health Effects of Water Reuse: A Combination of Toxicological and Chemical Methods for Assessment, Chapter 80. 1980. R. Baird, J. Gute, C. Jacks, R. Jenkins, L. Neisess, B. Scheybeler, R. Van Sluis, and W. Yanko. In: *Water Chlorination, Environmental Impact and Health Effects*, Vol. 3., ed. R. L. Jolley. Ann Arbor Science Pub. 3:925-935.

Salmonelloid Regrowth in Composted Sludges. C. F. Russ and W. A. Yanko. Southern California Chapter, American Society for Microbiology. Annual Meeting, San Diego 1979.

Development of a Virus Concentrator for the County Sanitation Districts of Los Angeles. C. McGee, W. Yanko, M. Nellor, and M. Selna. Annual Meeting of the American Society for Microbiology. Dallas, Texas. 1981.

Factors Affecting Salmonellae Repopulation in Composted Sludges. 1981. C. F. Russ and W. A. Yanko. *Applied and Environmental Microbiology*. Vol. 41, No. 3., 597-602.

County Sanitation Districts of Los Angeles Virus Monitoring and Laboratory Procedures. C. McGee and W. Yanko. California Water Pollution Control Association Annual Conference. 1981.

Salmonella Mutagen Test of Wellwater and Wastewater Extracts. R. Van Sluis and W. Yanko. California Water Pollution Control Association Annual Conference. 1981.

Mutagenicity and Organic Solute Recovery from Water with a High-Volume Resin Concentrator. 1983. R.L. Jenkins, C.A. Jacks, R.B. Baird, B.J. Scheybeler, L.B. Neisess, J.P. Gute, R.J. Van Sluis and W. A. Yanko. *Water Research*, 17:1569-1574

Optimizing Coliphage Recovery from Composted Municipal Sludges. 1987. Charles D. McGee and William A. Yanko. Annual Meeting of the American Society for Microbiology, Atlanta GA.

SBG Sulfa Enrichment for the Quantitative Isolation of Salmonellae from Sewage and Compost. 1987. Analytical Techniques and Residuals Management in Water Pollution Control. A.S. Walker and W.A. Yanko. Water Pollution Control Federation Specialty Series, Los Angeles, CA.

Occurrence of Pathogens in Distribution and Marketing Municipal Sludges. 1987. W. A. Yanko. Available from NTIS, Springfield, VA 22161.

Determining Pathogen Levels in Sludge Products. 1988. N. Goldstein. W.A. Yanko, J.M. Walker and W. Jakubowski. *Biocycle*. Vol. 29. No. 5.

Relationships Between Metal Concentrations and Crown Corrosion in Los Angeles County Sewers. 1991. Morton, R.L., W.A. Yanko, D.W. Graham and R.G. Arnold. *Research Journal WPCF*. Vol. 63, No. 5.

Comparison of a Long Term Enteric Virus Monitoring Data Base with Bacteriophage Reduction in Full Scale Water Reclamation Plants. 1992. Yanko, W.A. and M.T. Yahya. Water Quality International '92. Sixteenth Biennial Conference, Washington D.C.

Analysis of Ten Years Virus Monitoring Data from Los Angeles County Treatment Plants Meeting California Wastewater Reclamation Criteria. 1993. Yanko, W.A. *Water Environment Research*. Vol. 65, No. 3.

Evaluation of Composted Sewage Sludge Based Soil Amendments for Potential Risks of Salmonellosis. 1994. Skanavis, C. and W.A. Yanko. *Journal of Environmental Health*. Vol. 56, No. 7.

Evaluation of Methods for Enumerating Salmonella in Biosolids for Compliance with Part 503 Pathogen Regulations. Yanko, W.A., A.S. Walker J.L. Jackson, L.L. Libao and A.L. Garcia. 1995. *Water Environment Research*. Vol. 67, No. 3.

An Unexpected Temporal Pattern of Coliphage Isolation in Groundwaters Sampled from Wells at Varied Distances from Reclaimed Water Recharge Sites. W.A. Yanko, J.L. Jackson, F.P. Williams, A.S. Walker and M.S. Castillo. 1999. *Water Research*. Vol. 33, No. 1.

Physicochemical Mechanisms Responsible for the Filtration of a Filamentous Bacteriophage in Quartz Sand. J.A. Redman, S.B. Grant, T.M. Olson, J.M. Adkins, J.L. Jackson, M.S. Castillo and W.A. Yanko. 1999. *Water Research*. Vol. 33, No. 1.

Study To Compare Current Fecal Bacterial Monitoring With Fecal Coliphage Monitoring On An

Equivalent Volume Basis. Julie Millenbach, Shawn Thompson and William Yanko. June, 2000. AWWA Research Foundation. Denver, CO 80235-3098

Clostridium perfringens as a Potential Indicator for the Presence of Sewage Solids in Marine Sediments. Constantina Skanavis and William A. Yanko. 2001. *Marine Pollution Bulletin*. Vol 42, No. 1.

An Investigation of Soil Aquifer Treatment for Sustainable Water Reuse. P. Fox, S. Houston, P. Westerhoff, J. Drewes, M. Nellor, W. Yanko, R. Baird, M. Rincon, R. Arnold, K. Lansey, R. Bassett, C. Gerba, M. Karpiscak, G. Amy, M. Reinhard. 2001. Jointly sponsored by: AWWA Research Foundation, Denver, CO 80235-3098 and U.S. Environmental Protection Agency, Washington D.C. Published by AWWA Research Foundation and American Water Works Association, Denver, CO.

Giardia Cysts in Tertiary-Treated Wastewater Effluents: Are They Infective? A. Garcia, W. Yanko, G. Batzer, and G. Widmer. 2002. *Water Environment Research*. Vol 74, No. 6.

Detection of Infectious Human Adenoviruses in Tertiary Treated and UV Disinfected Wastewater. Shawn S. Thompson, James L. Jackson, Mila Suva-Castillo, William A. Yanko, Ziad El Jack, Jeff Kuo, Ching-Lin Chen, Fred P. Williams, and David P. Schnurr. 2003. *Water Environment Research*. Vol 75, No. 2.

Review and Analysis of Santa Ana River Water Quality & Health Study, Microbiology Studies. 2003. W.A. Yanko. Prepared for Orange County Water District, Fountain Valley, CA 92708.

Development of Practical Methods to Assess the Presence of Bacterial Pathogens in Water. 2004. W.A. Yanko, R. DeLeon, P.A Rochelle, W. Chen. Water Environment Research Foundation, Alexandria, VA 22314.